UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:	)	**NOTICE AND**
	)	**FINDING OF VIOLATION**
Vantage Oleochemicals, Inc.	)	
Chicago, IL	)	**EPA-5-22-IL-21**
	)	
Proceedings Pursuant to	)	
the Clean Air Act,	)	
42 U.S.C. §§ 7401 et seq.	)	
	)	

NOTICE AND FINDING OF VIOLATION

The U.S. Environmental Protection Agency finds that Vantage Oleochemicals, Inc.is violating Section 112 of the Clean Air Act, 42 U.S.C. § 7412, and the Illinois State Implementation Plan (SIP). Specifically, Vantage Oleochemicals, Inc. (Vantage Oleochemicals) is violating the Standards of Performance for New Stationary Sources (NSPS) for Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations at 40 C.F.R. Part 60, Subpart NNN, and the Illinois SIP as follows:

Regulatory Authority

A. Standards of Performance for New Stationary Sources General Provisions at 40 C.F.R. Part 60, Subpart A

1. The NSPS General Provisions at 40 C.F.R. Part 60 Subpart A (NSPS Subpart A) applies to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of any standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.

2. The NSPS Subpart A, at 40 C.F.R. § 60.8(a) requires that except as specified in paragraphs (a)(1),(a)(2), (a)(3), and (a)(4) of this section, within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, or at such other times specified by this part, and at such other times as may be required by the Administrator under section 114 of the Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Administrator a written report of the results of such performance test(s).

B. Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations at 40 C.F.R. Part 60, Subpart NNN

3. The NSPS for Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations (NSPS Subpart NNN) applies to each affected facility that is part of a process unit that produces any of the chemicals listed in 40 C.F.R. § 60.667 as a product, co-product, by-product, or intermediate.

4. The NSPS Subpart NNN, at 40 C.F.R. § 60.660 designates that the affected facility is any of the following for which construction, modification, or reconstruction commenced after December 30, 1983: 1) each distillation unit not discharging its vent stream into a recovery system; 2) each combination of a distillation unit and the recovery system into which its vent stream is discharged; 3) each combination of two or more distillation units and the common recovery system into which their vent streams are discharged.

5. 40 C.F.R. § 60.661 defines "distillation unit" as a device or vessel in which distillation operations occur, including all associated internals (such as trays or packing) and accessories (such as reboiler, condenser, vacuum pump, steam jet, etc.), plus any associated recovery system.

6. 40 C.F.R. § 60.661 defines "distillation operation" as an operation separating one or more feed stream(s) into two or more exit stream(s), each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and vapor-phase as they approach equilibrium within the distillation unit.

7. Pursuant to 40 C.F.R. § 60.660(a), the provisions of the NSPS Subpart NNN apply to each affected facility designated in 40 C.F.R. § 60.660(b) that is part of a process unit that produces any of the chemicals listed in 40 C.F.R. § 60.667 as a product, co-product, by-product, or intermediate, except as provided in 40 C.F.R. § 60.660(c).

8. Among other things, 40 C.F.R. § 60.667 lists:

    a. Acetone;
    b. Benzene;
    c. n-Butane;
    d. Chloroform;
    e. Ethylene glycol;
    f. Ethylene oxide;
    g. Glycerol;
    h. Methanol;
    i. Styrene;
    j. Toluene; and
    k. Vinyl Chloride.

9. 40 C.F.R. § 60.661 defines "vent stream" as any gas stream discharged directly from a distillation facility to the atmosphere or indirectly to the atmosphere after diversion through other process equipment. The vent stream excludes relief valve discharges and equipment leaks including, but not limited to, pumps, compressors, and valves.

10. 40 C.F.R. § 60.661 defines "recovery device" as an individual unit of equipment, such as an absorber, carbon adsorber, or condenser, capable of and used for the purpose of recovering chemicals for use, reuse, or sale.

11. 40 C.F.R. § 60.661 defines "recovery system" as individual recovery device or series of such devices applied to the same vent stream.

12. 40 C.F.R. § 60.663(f) requires an owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under 40 C.F.R. § 60.662 with control devices other than incinerator, boiler, process heater, or flare; or recovery device other than an absorber, condenser, or carbon adsorber shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

13. 40 C.F.R. § 60.660(c)(4) states that each affected facility that has a total resource effectiveness (TRE) index value greater than 8.0 is exempt from all provisions of this subpart except for 40 C.F.R. §§ 60.662; 60.664 (e), (f), and (g); and 60.665 (h) and (l).

14. The NSPS Subpart NNN, at 40 C.F.R. § 60.662 requires that the affected facility comply with the requirements in 40 C.F.R. § 60.662 (a), (b), or (c) for each vent stream on and after the date on which the initial performance test required by 40 C.F.R. §§ 60.8 and 60.664 is completed, but no later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. 40 C.F.R. § 60.662 (a) through (c) requires each owner or operator of any affected facility to either:

    a. Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

    b. Combust the emissions in a flare that meets the requirements of 40 C.F.R. § 60.18; or

    c. Maintain a TRE index value greater than 1.0 without use of VOC emission control devices.

15. 40 C.F.R. § 60.664(f) requires, among other things, for purposes of complying with 40 C.F.R. § 60.662(c), the owner or operator of a facility affected by NSPS Subpart NNN

shall calculate the TRE index value of the vent stream using the equation for incineration in 40 C.F.R. § 60.664(e)(1) and the flare equation in 40 C.F.R. § 60.664(e)(2) and select the lower of the two values.

16. 40 C.F.R. § 60.665(l) requires each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of 40 C.F.R. § 60.660(c)(4), (c)(5), or (c)(6) or 40 C.F.R. § 60.662 shall submit to the Administrator semiannual reports of the following recorded information. The initial report shall be submitted within 6 months after the initial start-up date, and shall include the following:

    a. Exceedances of monitored parameters recorded under 40 C.F.R. § 60.665 (c) and (g).

    b. All periods recorded under 40 C.F.R. § 60.665(d) when the vent stream is diverted from the control device or has no flow rate.

    c. All periods recorded under 40 C.F.R. § 60.665(e) when the boiler or process heater was not operating.

    d. All periods recorded under 40 C.F.R. § 60.665(f) in which the pilot flame of the flare was absent.

    e. Any change in equipment or process operation that increases the operating vent stream flow rate above the low flow exemption level in 40 C.F.R. § 60.660(c)(6), including a measurement of the new vent stream flow rate, as recorded under 40 C.F.R. § 60.665(i). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed with the same time period to verify the recalculated flow value and to obtain the vent stream characteristics of heating value and ETOC. The performance test is subject to the requirements of § 60.8 of the General Provisions. Unless the facility qualifies for an exemption under the low capacity exemption status in 40 C.F.R. § 60.660(c)(5), the facility must begin compliance with the requirements set forth in 40 C.F.R. § 60.662.

    f. Any change in equipment or process operation, as recorded under paragraph (j) of this section, that increases the design production capacity above the low-capacity exemption level in 40 C.F.R. § 60.660(c)(5), and the new capacity resulting from the change for the distillation process unit containing the affected facility. These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and ETOC. The performance test is subject to the requirements of 40 C.F.R. § 60.8. The facility must begin compliance with the requirements set forth in 40 C.F.R. § 60.660(d) or 40 C.F.R. § 60.662. If the facility chooses to comply

with 40 C.F.R. § 60.662, the facility may qualify for an exemption in 40 C.F.R. § 60.660(c)(4) or (6).

g. Any recalculation of the TRE index value, as recorded under 40 C.F.R. § 60.665(h).

C. Illinois State Implementation Plan

17. Section 110 of the CAA, 42 U.S.C. § 7410, requires each state to adopt and submit to EPA a plan that provides for the implementation, maintenance, and enforcement of primary and secondary National Ambient Air Quality Standards in each air quality control region (or portion thereof) within the state. Upon approval by EPA, the plan becomes a part of the applicable state implementation plan for the state.

18. EPA approved 35 Illinois Administrative Code ("Ill. Adm. Code" or "IAC") Title (tit.) 201, "Permits and General Conditions," into the federally enforceable SIP of Illinois. 37 Fed. Reg. 10862 (May 31, 1972) (codified at 40 C.F.R.§ 52.722). Since then, EPA has approved several revisions of 35 IAC tit. 201 into the federally enforceable SIP. *See*, e.g., 82 Fed. Reg. 30363 (June 30, 2017), and 65 Fed. Reg. 14 (January 3, 2000).

19. EPA approved the Illinois federally enforceable state operating permit (FESOP) program into the SIP of Illinois. 57 Fed. Reg. 59928 (December 17, 1992) (codified at 40 C.F.R. § 52.737). Since then, EPA has approved revisions to 35 Ill. Adm. Code 201.162(a). 79 Fed. Reg. 18997 (April 7, 2014).

20. EPA approved 35 Ill. Adm. Code 218, "Organic Material Emission Standards and Limitations for the Chicago Area" into the federally enforceable SIP of Illinois. 59 Fed. Reg. 46562 (September 9, 1994). Since then, EPA has approved several revisions of 35 IAC tit. 218 into the federally enforceable SIP. *See*, e.g., 77 Fed. Reg. 16940 (March 23, 2012).

21. 35 Ill. Adm. Code 211.7150 states "Volatile Organic Material (also "VOM") or "Volatile Organic Compound" (also "VOC") means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, that participates in atmospheric photochemical reactions.

22. Pursuant to 35 Ill. Adm. Code 218.421, the owner or operator which processes more than 3660 mg/year (4033 tons/year) gaseous and light liquid VOM, and whose components are used to manufacture the synthetic organic chemicals or polymers listed in 35 Ill. Adm. Code 218, Appendix A, shall comply with 35 Ill. Adm. Code 218, Subpart Q.

23. 35 Ill. Adm. Code 218 Appendix A states, among other things, a list of chemicals defining synthetic organic chemical and polymer manufacturing which includes, but is not limited to: acetone, acrolein, benzene, chloroform, ethylene, ethylene oxide, glycerol (synthetic), styrene, toluene, and xylenes.

24. 35 Ill. Adm. Code 201.152 states, an application for a construction permit shall contain, as a minimum, the following data and information: the nature of the emission unit and air

pollution control equipment, including the expected life and deterioration rate; information concerning processes to which the emission unit or air pollution control equipment is related; the quantities and types of raw materials to be used in the emission unit or air pollution control equipment; the nature, specific points of emission and quantities of uncontrolled and controlled air contaminant emissions at the source that includes the emission unit or air pollution control equipment; the type, size, efficiency and specifications (including engineering drawings, plans and specifications certified to by a registered Illinois professional engineer) of the proposed emission unit or air pollution control equipment; maps, statistics and other data reasonably sufficient to describe the location of the emission unit or air pollution control equipment.

25. 35 Ill. Adm. Code 201.157 states, among other things, that an application for an operating permit shall contain, as a minimum, the data and information specified in Section 201.152. Each application shall list all individual emission units and air pollution equipment for which a permit is sought.

26. 35 Ill. Adm. Code 201.121 states that the existence of a permit under 201.103 shall not constitute a defense to a violation of the Act or any rule or regulation of this Chapter, except for construction or operation without a permit.

27. 35 Ill. Adm. Code 201.122 states that, notwithstanding other provisions of this Chapter, evidence that specified air contaminant emissions, as calculated on the basis of standard emission factors or other factors generally accepted as true by those persons engaged in the field of air pollution control, exceed the limitations prescribed by this Chapter shall constitute adequate proof of a violation in the absence of a showing that actual emissions are in compliance.

Finding of Facts

28. Vantage Oleochemicals owns and operates a stationary source facility in the synthetic organic chemicals manufacturing industry located at 4650 S Racine Ave, Chicago, Illinois (the Facility).

29. At all times relevant to this NOV/FOV, Vantage Oleochemicals was and is a "person" as that term is defined in Section 302(e) of the CAA, 42 U.S.C. § 7602(e).

30. Vantage Oleochemicals was and is an "owner" and an "operator" as those terms are defined in Section 112 of the CAA, 42 U.S.C. § 7412, and the Illinois SIP.

31. On October 24, 2008, the Illinois Environmental Protection Agency (IEPA) issued a FESOP to H.I.G. Chemicals, Inc., the prior owner and operator of the Facility (the 2008 FESOP). This 2008 FESOP sets VOC and HAP limitations from emission units.

32. On June 6, 2013, the IEPA issued a construction permit to Vantage Oleochemicals (the 2013 Permit). This 2013 Permit allowed the construction of the Luwa Glycerin Distillation Plant (GD2 Plant), including the Crude Glycerin Storage Tank and Vacuum Dryer System comprised of a vacuum condenser, vacuum pump and vacuum pot.

33. Section 3a of the 2013 Permit states that, among other things, the Luwa Glycerin Vacuum Dryer System is subject to the NSPS Subparts A and NNN.

34. At the Facility, Vantage Oleochemicals operates a number of emission sources including, but not limited to:

    a. Crude Glycerin Storage Tank (Tank #323);
    b. Luwa Glycerin Vacuum Dryer;
    c. Wastewater Treatment Plant including, but not limited to:
        i. Hotwells;
        ii. Main Catchment Pit;
        iii. Closed-tank physical separator (Tank #163);
        iv. Hydroskimmer;
        v. DAF; and
        vi. 1A outlet.

35. Vantage Oleochemical Wastewater Treatment Plant (WWTP) treats water from their processes including, but not limited to, steam condensate, cooling tower blowdown, vacuum pumps, and scrubber water blowdown. This process water includes process water from the GD2 plant.

36. EPA conducted Clean Air Act inspections of Vantage Oleochemicals on November 9, 2021, and June 8, 2022 (the CAA inspections). The CAA inspections included an onsite tour of the facility.

37. Following the inspection that took place on November 9, 2021, EPA requested follow-up documents, including the permit application for the 2013 Permit.

38. On March 8, 2022, EPA issued a request for information (March Information Request) to Vantage Oleochemicals.

39. On August 5, 2022, EPA issued a request for information (August Information Request) to Vantage Oleochemicals.

40. The GD2 plant vent streams that route to the GD scrubber including emissions from two process vents on the Main and Dryer vacuum pumps. All other vent streams from the GD2 plant process unit do not vent to a scrubber.

41. The hydroskimmer operated in the WWTP at the Facility is a recovery device as defined in 40 C.F.R. § 60.661.

42. The WWTP emission units including, but not limited to, the hydroskimmer, main catchment pit, and Tank #163 in the WWTP at the Facility are recovery streams as defined in 40 C.F.R. § 60.661.

43. Gas emissions from the WWTP emission units including, but not limited to, the hydroskimmer, main catchment pit, and Tank #163 in the WWTP at the Facility are defined as being part of the vent stream from the GD2 plant in 40 C.F.R. § 60.661.

44. Pursuant to NSPS Subpart NNN, the Wastewater Treatment Plant at the Facility is included in all process units subject to NSPS Subpart NNN, as defined in 40 C.F.R. § 60.661.

45. On February 22, 2012, Vantage Oleochemicals submitted a permit application for the construction of the Luwa Glycerin Vacuum Dryer System to IEPA.

46. The permit application for the 2013 construction permit states, among other things, that:

    a. The vacuum system condenses methanol from the process into wastewater at 70ºF;

    b. Wastewater is also generated from the main vacuum system at the GD2 plant manufacturing process; and

    c. The wastewater from the vacuum system is routed directly to the city wastewater outfall.

47. The Facility did not include the WWTP emission units in its revised permit application for the 2013 Permit, as described in 35 Ill. Adm. Code 201.152.

48. Pursuant to Section 8(b) of the 2008 FESOP, Vantage Oleochemicals is required to operate the glycerin distillation unit, raw material unloading area, splitting unit, glycerin evaporation unit, wet separation unit, hydrogenation unit, oleic acid and stearic distillation unit, stearic acid flaker, wastewater treatment system, continuous hardening operation and tank farm with negligible emissions of volatile organic materials and particulate matter.

49. On May 7, 2013, Vantage Oleochemical submitted a FESOP renewal application (the FESOP application) to IEPA. As of the date of issuance of this NOVFOV, this permit application is still pending.

50. The FESOP application did not include any requests, revisions, or modifications to the WWTP emission units.

51. Pursuant to the August Information Request, Vantage Oleochemicals submitted information including, among other things, that process materials used contain benzene and acrolein, and that Vantage Oleochemicals generates ethylene oxide (EtO) in several of the processes at the Facility.

Violations

52. Several WWTP emission units, including, but not limited to, Tank #163, the main catchment pit, and hydroskimmer, are included in the GD2 plant vent streams. Vantage Oleochemicals did not conduct an initial performance test on the WWTP emission units in the GD2 plant vent stream. Therefore, Vantage Oleochemicals did not test each vent stream from the GD2 plant, in violation of 40 C.F.R. § 60.8.

53. Vantage Oleochemicals has not provided information describing the operation and maintenance of the hydroskimmer. Pursuant to the NSPS Subpart NNN, the hydroskimmer is a recovery device, as defined in 40 C.F.R. § 60.661. 40 C.F.R. § 60.663(f) requires an owner or operated of an affected facility seeking to demonstrate compliance with the standards under 40 C.F.R. § 60.662 with, among other things, a recovery device other than an adsorber, condenser, or carbon adsorber, shall provide to the Administrator information describing the operation of the recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. Vantage Oleochemicals has not provided information describing the operation and maintenance of the hydroskimmer, in violation of 40 C.F.R. § 60.663(f).

54. Vantage Oleochemicals has not submitted semiannual reports as required by NSPS NNN for the past 5 years, in violation of 40 C.F.R. § 60.665(l).

55. Vantage Oleochemicals produces wastewater from, among other things, the GD2 plant Luwa Glycerin Vacuum Dryer System that is then processed onsite in the WWTP. Vantage Oleochemicals did not provide complete information on specific points of emission and quantities of uncontrolled and controlled air contaminant emissions at the source, including all vent streams from NSPS Subpart NNN including, but not limited to, WWTP emission units. Therefore, Vantage Oleochemicals is and has, for the past 5 years, been in violation of 35 Ill. Adm. Code 201.152 and 35 Ill. Adm. Code 201.157.

Environmental Impact of Violations

56. These violations have caused or can cause excess emissions of VOCs.

57. VOCs are photochemical oxidants associated with several detrimental health effects, which include birth defects and cancer, as well as environmental and ecological effects. In the presence of sunlight, VOCs are influenced by a variety of meteorological conditions and have the ability to create photochemical smog. VOCs react with oxygen in the air to produce ground-level ozone.

58. Breathing ozone contributes to a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level ozone also can reduce lung function and inflame lung tissue. Repeated exposure may permanently car lung tissue.

MICHAEL HARRIS Digitally signed by MICHAEL HARRIS
Date: 2022.09.26 10:14:01 -05'00'

Michael D. Harris
Division Director
Enforcement and Compliance Assurance Division